

RINGKASAN

Cabai merah merupakan salah satu komoditas sayuran yang bernilai ekonomi tinggi di Indonesia. Penyakit bercak daun yang disebabkan oleh jamur *Cercospora* sp. merupakan salah satu faktor pembatas produksi cabai merah. Terjadinya penyakit bercak daun ditentukan oleh keberhasilan patogenesis oleh jamur *Cercospora* sp. Selain itu, cabai merah yang tahan terhadap penyakit bercak daun memiliki kandungan asam askorbat lebih tinggi daripada cabai merah yang rentan. Tujuan penelitian ini adalah mengetahui kemampuan tumbuh patogen *Cercospora* sp. pada medium yang diberi asam askorbat dan mengetahui pengaruh inokulasi patogen *Cercospora* sp. terhadap kandungan asam askorbat pada daun cabai merah (*C. annuum* L.).

Penelitian ini dilakukan secara eksperimental dengan Rancangan Acak Lengkap (RAL). Uji secara *in vitro* perlakuan yang dicobakan terdiri atas medium PDA dan medium PDB yang diberi asam askorbat dengan konsentrasi 0 mg.l⁻¹, 0,25 mg.l⁻¹, 0,5 mg.l⁻¹, 0,75 mg.l⁻¹ dan 1,0 mg.l⁻¹, masing-masing konsentrasi diulang 5 kali. Uji secara *in planta* perlakuan yang dicobakan menggunakan varietas cabai merah *hot chili*, varietas cabai merah besar dan varietas cabai merah keriting, masing-masing diulang 5 kali. Perlakuan yang dicobakan meliputi 2 kelompok yaitu perhitungan intensitas penyakit dan pengukuran kandungan asam askorbat pada daun cabai merah. Uji *in vitro* variabel bebas dalam penelitian ini yaitu dosis asam askorbat, variabel tergantung yaitu pertumbuhan patogen *Cercospora* sp. Parameter utama yang diamati yaitu diameter koloni jamur *Cercospora* sp. dan bobot kering miselium. Uji *in planta* variabel bebas dalam penelitian ini yaitu jenis varietas cabai merah, variabel tergantung yaitu tingkat kerusakan daun cabai merah. Parameter utama yang diamati yaitu intensitas penyakit, parameter pendukung yaitu periode inkubasi penyakit, kandungan asam askorbat pada daun cabai merah, temperatur dan kelembapan udara. Data uji *in vitro* yang diperoleh dianalisis menggunakan *Analysis of Variance* (ANOVA) pada tingkat kepercayaan 95%, kemudian perlakuan yang memberikan perbedaan nyata atau sangat nyata dilanjutkan dengan uji Beda Nyata Terkecil (BNT). Data uji *in planta* yang diperoleh dianalisis menggunakan *Analysis of Variance* (ANOVA) pada tingkat kepercayaan 95%, kemudian perlakuan yang memberikan perbedaan nyata atau sangat nyata dilanjutkan dengan uji Beda Nyata Jujur (BNJ).

Hasil penelitian menunjukkan bahwa patogen *Cercospora* sp. mampu tumbuh dengan baik pada medium PDA maupun medium PDB yang diberi asam askorbat. Inokulasi patogen *Cercospora* sp. dapat meningkatkan kandungan asam askorbat pada daun cabai merah.

Kata kunci: Cabai merah (*Capsicum annuum* L.), *Cercospora* sp., bercak daun cabai, asam askorbat

SUMMARY

Red chili is one of the vegetable commodities with high economic value in Indonesia. Leaf spot disease caused by the fungus *Cercospora* sp. is one of the limiting factors for the production of red chili. The occurrence of leaf spot disease is determined by the success of the pathogenesis by the fungus *Cercospora* sp. Also, red chilies that are resistant to leaf spot disease have higher ascorbic acid content than vulnerable red chilies. The purpose of this study was to determine the ability to grow pathogens *Cercospora* sp. on the medium which was given ascorbic acid and know the effect of inoculation of the pathogen *Cercospora* sp. against ascorbic acid content in red chili leaves (*C. annuum* L.).

This research was conducted experimentally with a Completely Randomized Design (CRD). In vitro test the treatment that was tried consisted of PDA medium and GDP medium which were given ascorbic acid with a concentration of 0 mg.l⁻¹, 0,25 mg.l⁻¹, 0,5 mg.l⁻¹, 0,75 mg.l⁻¹ dan 1,0 mg.l⁻¹, each concentration was repeated 5 times. In planta treatment tests were tried using *hot chili* red chili varieties, large red chili varieties and curly red chili varieties, each repeated 5 times. The treatments tested included 2 groups, namely the calculation of disease intensity and measurement of ascorbic acid content in red chili leaves. In vitro test of the independent variable in this study was the ascorbic acid dose, the dependent variable was the growth of the pathogen *Cercospora* sp. The main parameters observed were the diameter of the *Cercospora* sp. and mycelium dry weight. In planta test the independent variable in this research is the type of red chili varieties, the dependent variable is the level of damage to the red chili leaves. The main parameters observed were the intensity of the disease, supporting parameters namely the incubation period of the disease, the content of ascorbic acid in the red chili leaves, temperature and humidity. In vitro test data obtained were analyzed using *Analysis of Variance* (ANOVA) at a 95% confidence level, then the treatment that gave a real or very real difference was followed by the Least Significant Difference test (LSD). In planta test data obtained were analyzed using *Analysis of Variance* (ANOVA) at a 95% confidence level, then the treatment that gave a real or very real difference was followed by the Honestly Significant Difference test (BNJ).

The results showed that the pathogen *Cercospora* sp. able to grow well on the PDA medium and GDP medium which were given ascorbic acid. Inoculation of pathogen *Cercospora* sp. can increase ascorbic acid content in red chili leaves.

Key words: Red chili (*Capsicum annuum* L.), *Cercospora* sp., Chili leaf spot, ascorbic acid